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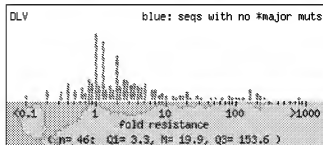
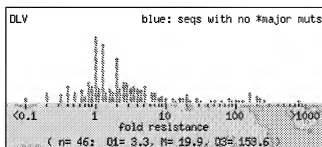
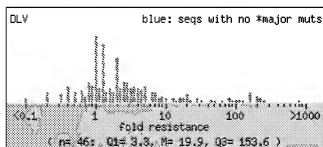
HIV DRUG RESISTANCE DATABASE

A curated public database designed to represent, store, and analyze the divergent forms of data underlying HIV drug resistance.

HOME GENOTYPE-RX GENOTYPE-PHENOTYPE-CLINICAL HIVdb PROGRAM

Detailed RT Phenotype Query

Mutations	G190A, K101E	References	11
Drugs	NVP,DLV,EFV	Isolates	48
Assay	ANY	Results	141
WithNoOtherMajorMuts	No		



Drug susceptibility results of sequences matching input query are shown in the table below. Literature references are indicated, as well as the isolate name and type and a list of major, minor and other mutations. The fold resistance to the indicated antiretroviral drug is indicated in the last column of the table. Data is also summarized above in graphical format. Blue bars indicate the range of resistance of those sequences with no major NNRTI drug resistance mutations or major NNRTI drug resistance mutations and red bars indicate the fold resistance of sequences matching the input query. The total number of sequences(n), the median fold resistance(m), as well as the first(Q1) and third quantile(Q3) are indicated.

Author (yr)	Type	Isolates	NR1Major	NR2Major	NR3Major	NR4Major	Other	Method	Drug	Fold
<u>Huang</u> (1999)	Lab	WH101E-1081-190			K101E, G190A	V1081	K102Q, S162C, K277R	Virologic	DLV	>200.0
					K101E, G190A	V1081	K102Q, S162C, K277R	Virologic	EFV	270.0
					K101E, G190A	V1081	K102Q, S162C, K277R	Virologic	NVP	>680.0
<u>Petropoulos</u> (2000)	Lab	NL43-nrti-10			K101E, G190A		K102Q, S162C, K277R	Virologic	DLV	2.0
					K101E, G190A		K102Q, S162C, K277R	Virologic	EFV	123.0
<u>Winters</u> (2000)	Clinical	q759	D67N, Y115F, Q151M, M184V	A62V, T69-, V75I, F77L, F116Y, K219E	K101E, Y181C, G190A		K102Q, S162C, K277R, V35L, S68G, K122E, I135T, R172K, E203QE, R211K	Winters- PBMC	EFV	>500.0
			D67N, Y115F, Q151M, M184V	A62V, T69-, V75I, F77L, F116Y, K219E	K101E, Y181C, G190A		V35L, S68G, K122E, I135T, R172K, E203QE, R211K	Winters- PBMC	NVP	>150.0
<u>Gonzales</u> (2002)	Clinical	49110-1	D67N, K70R	T215I, K219Q	K101E, G190A	V1791	A98S, K122E, D123E, D177E, I178L, V245E, K277R, T286A, E297K	Virologic	DLV	2.1
			D67N, K70R	T215I, K219Q	K101E, G190A	V1791	A98S, K122E, D123E, D177E, I178L, V245E, K277R, T286A, E297K	Virologic	EFV	76.0
			D67N, K70R	T215I, K219Q	K101E, G190A	V1791	A98S, K122E,	Virologic	NVP	>400.0

Margot (2002)	Clinical	MM-3576366701	M41L, M184V, T215FY	K101DEHQ, G190A	D123E, D177E, H178L, V245E, K277R, T286A, E297K A98S, D121Y, H35VI, H42VI, D177E, Q207E, R211K, D237E, T286A, M357T, R358KR, T377Q, T386AVTI, K395R, E399D, A400TA	Virco	DLV	59.4
			M41L, M184V, T215FY	K101DEHQ, G190A	A98S, D121Y, H35VI, H42VI, D177E, Q207E, R211K, D237E, T286A, M357T, R358KR, T377Q, T386AVTI, K395R, E399D, A400TA	Virco	EFV	398.4
			M41L, M184V, T215FY	K101DEHQ, G190A	A98S, D121Y, H35VI, H42VI, D177E, Q207E, R211K, D237E, T286A, M357T, R358KR, T377Q, T386AVTI, K395R, E399D, A400TA	Virco	NVP	49.5

		MM-5219366841	K65R, V75AVTI	A62VA, T69IT, K219QRK	K101E, Y181CY, G190A	V90IV, V106IV	V21IV, S66GS, K104N, R211K, H221YH, D237N, V245Q, I293VI, A304VA, E328D, A376VA, V381IV, K385RK, K390RK, E399D	Virco	EFV	364.4
			K65R, V75AVTI	A62VA, T69IT, K219QRK	K101E, Y181CY, G190A	V90IV, V106IV	V21IV, S66GS, K104N, R211K, H221YH, D237N, V245Q, I293VI, A304VA, E328D, A376VA, V381IV, K385RK, K390RK, E399D	Virco	NVP	32.1
<u>Qari (2002)</u>	Clinical	215566	D67N, T69D, T215Y	K219N	K101E, Y181C, G190A		K122E, I202V, A272P, K277R, Q278E, T286A, E297K, G335D, R356K, M357R, K366R, A376V, T386A, A400T	Virco	DLV	>110.6
			D67N, T69D, T215Y	K219N	K101E, Y181C, G190A		K122E, I202V, A272P, K277R, Q278E, T286A, E297K, G335D, R356K, M357R, K366R,	Virco	EFV	283.3

		D67N, T69D, T215Y	K219N	K101E, Y181C, G190A	A376V, T386A, A400T K122E, I202V, A272P, K277R, Q278E, T286A, E297K, G335D, R356K, M357R, K366R, A376V, T386A, A400T	Virco	NVP	>45.0
		D67N, T69D, T215Y	K219N	K101E, Y181C, G190A	K122E, I202V, A272P, K277R, Q278E, T286A, E297K, G335D, R356K, M357R, K366R, A376V, T386A, A400T	Virologic	DLV	19.7
		D67N, T69D, T215Y	K219N	K101E, Y181C, G190A	K122E, I202V, A272P, K277R, Q278E, T286A, E297K, G335D, R356K, M357R, K366R, A376V, T386A, A400T	Virologic	EFV	101.4
		D67N, T69D, T215Y	K219N	K101E, Y181C, G190A	K122E, I202V, A272P, K277R, Q278E, T286A, E297K, G335D, R356K, M357R,	Virologic	NVP	>593.0

Johnston (2005)	Clinical	71361-1	K65R		K101E, G190A	A98G	K366R, A376V, T386A, A400T V35T, K49R, K122E, A158S, E169D, V179D, R211A, V245M	Virologic	DLV	5.9
			K65R		K101E, G190A	A98G	V35T, K49R, K122E, A158S, E169D, V179D, R211A, V245M	Virologic	EFV	>1500.0
			K65R		K101E, G190A	A98G	V35T, K49R, K122E, A158S, E169D, V179D, R211A, V245M	Virologic	NVP	>893.0
Mo (2005)	Clinical	8242_d600_Virco	D67N, K70R, T215F	K219Q	K101E, G190A	A98G	V35M, I135K, E169D, I178F, G196E, H208Y, D237DN, V276T, K281R, T286P, V292I, E297K, A304E, M357T, K366R, A400S	Virco	DLV	182.3
			D67N, K70R, T215F	K219Q	K101E, G190A	A98G	V35M, I135K, E169D, I178F, G196E, H208Y, D237DN, V276T, K281R, T286P,	Virco	EFV	17.0

		D67N, K70R, T215F	K219Q	K101E, G190A	A98Q	V292I, E297K, A304E, M357T, K366R, A400S V35M, I135K, E169D, I178F, G196E, H208Y, D237DN, V276T, K281R, T286P, V292I, E297K, A304E, M357T, K366R, A400S	Virco	NVP	84.5
	9053_d233	D67N, K70R, M184V, T215F	T69TN, V118VI, K219E	K101KE, K103KN, G190GA		E6EK, K20KR, V35VA, K49KR, W88C, T139TI, A158S, S162D, K166R, E169D, R211K, F214L, V245M, E297K	Virolgic	DLV	7.2
		D67N, K70R, M184V, T215F	T69TN, V118VI, K219E	K101KE, K103KN, G190GA		E6EK, K20KR, V35VA, K49KR, W88C, T139TI, A158S, S162D, K166R, E169D, R211K, F214L, V245M, E297K	Virolgic	EFV	1.3
		D67N, K70R, M184V, T215F	T69TN, V118VI, K219E	K101KE, K103KN, G190GA		E6EK, K20KR, V35VA, K49KR, W55C,	Virolgic	NVP	53.0

						T139TI, A158S, S162D, K166R, E169D, R211K, F214L, V245M, E237K			
		9126_d239	M184V	A62AV	K101KE, K103KN, G190A		E28EG, K102EK, I195K, G196E, H221HY, E243N, T286A	Virologic	DLV 1.4
			M184V	A62AV	K101KE, K103KN, G190A		E28EG, K102EK, I195K, G196E, H221HY, E246N, T286A	Virologic	EFV 14.0
			M184V	A62AV	K101KE, K103KN, G190A		E28EG, K102EK, I195K, G196E, H221HY, E248N, T286A	Virologic	NVP 139.0
<u>Rhee</u> (2005)	Clinical	CA7736	M41L, K70R, L74V, T215Y	D67G, K219E	K101E, Y181V, G190A		E28A, V60I, S68G, K122E, I135T, I178M	Virologic	DLV >250.0
			M41L, K70R, L74V, T215Y	D67G, K219E	K101E, Y181V, G190A		E28A, V60I, S68G, K122E, I135T, I178M	Virologic	EFV >700.0
			M41L, K70R, L74V, T215Y	D67G, K219E	K101E, Y181V, G190A		E28A, V60I, S68G, K122E, I135T, I178M	Virologic	NVP >400.0
<u>Baxter</u> (2006)	Clinical	1050-030305	M41L, D67N, V75M, M184V, L210W, T215Y	E44A	K101E, Y181C, G190A	A98G, F227LF	T39AT, K43E, V60I, T107S, L109I, K122E,	Virco	DLV 3.1

						H135T, H167V, D177E, G196E, E203K, H208Y, R211K, K223E, V245E			
			M41L, D67N, V75M, M184V, L210W, T215Y	E44A	K101E, Y181C, G190A	A98G, F227LF	T39AT, K43E, V60I, T107S, L109I, K122E, H135T, H167V, D177E, G196E, E203K, H208Y, R211K, K223E, V245E		



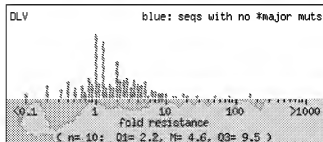
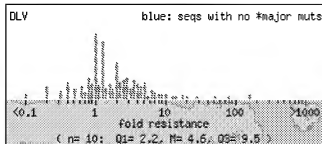
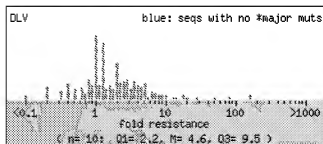
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HOME GENOTYPE-RX GENOTYPE-PHENOTYPE-CLINICAL HIVdb PROGRAM

Detailed RT Phenotype Query

Mutations	G190S, K101E	References	4
Drugs	NVP,DLV,EFV	Isolates	10
Assay	ANY	Results	29
WithNoOtherMajorMuts	No		



Drug susceptibility results of sequences matching input query are shown in the table below. Literature references are indicated, as well as the isolate name and type and a list of major, minor and other mutations. The fold resistance to the indicated antiretroviral drug is indicated in the last column of the table. Data is also summarized above in graphical format. Blue bars indicate the range of resistance of those sequences with no "major NRTI drug resistance mutations" or "major NNRTI drug resistance mutations" and red bars indicate the fold resistance of sequences matching the input query. The total number of sequences(n), the median fold resistance(m), as well as the first(Q1) and third quartile(Q3) are indicated.

Page 1 from Results 1 to Result 29 from Total 29 Phenotype results

Author (yr)	Type	Isolates	NRTIMajor	NRTIMinor	NNRTIMajor	NNRTIMinor	Other	Method	Drug	Fold
Petroopoulos (2000)	Clinical	P644			K101E, G190S			Virologic	DLV	3.0

					K101E, G190S			Virologic	NVP	590.0
	Lab	NL43-nrti- 11			K101E, G190S		K102Q, S162C, K277R	Virologic	DLV	1.4
					K101E, G190S		K102Q, S162C, K277R	Virologic	EFV	>500.0
					K101E, G190S		K102Q, S162C, K277R	Virologic	NVP	>500.0
<u>Mo (2005)</u>	Clinical	6333_d114	M41L, D67N, K70R, V75VIM, T215F	K219E	L100LI, K101KE, K103KN, G190GRS		V60I, D123E, G196E, Q207H, A272P, Q278H, E297K	Virologic	DLV	3.4
			M41L, D67N, K70R, V75VIM, T215F	K219E	L100LI, K101KE, K103KN, G190GRS		V60I, D123E, G196E, Q207H, A272P, Q278H, E297K	Virologic	EFV	333.3
			M41L, D67N, K70R, V75VIM, T215F	K219E	L100LI, K101KE, K103KN, G190GRS		V60I, D123E, G196E, Q207H, A272P, Q278H, E297K	Virologic	NVP	645.1
		6333_d263	M41L, D67N, K70R, V75M, M184V, T215F	K219E	K101E, G190S		V60I, D123E, G196E, Q207H, A272P, Q278H, E297K	Virologic	DLV	0.2
			M41L, D67N, K70R, V75M, M184V, T215F	K219E	K101E, G190S		V60I, D123E, G196E, Q207H, A272P, Q278H, E297K	Virologic	EFV	302.0
			M41L, D67N, K70R, V75M, M184V, T215F	K219E	K101E, G190S		V60I, D123E, G196E, Q207H, A272P, Q278H, E297K	Virologic	NVP	512.8
<u>Paxlo (2006)</u>	Clinical	1479- 030731	M41L, L74V, L210W, T215Y	D67E, K70A, V118I	K101E, Y181C, G190S	A98G	T39S, K122E, S162C, Q174N, V183IV, G196E, T200AT,	Virco	DLV	>145.1

			M41L, L74V, L210W, T215Y	D67E, K70A, V118I	K101E, Y181C, G190S	A98G	R211K, L228R, V245EV T39S, K122E, S162C, Q174N, V189IV, G196E, T200AT, R211K, L228R, V245EV	Virco	EFV	>374.7
			M41L, L74V, L210W, T215Y	D67E, K70A, V118I	K101E, Y181C, G190S	A98G	T39S, K122E, S162C, Q174N, V189IV, G196E, T200AT, R211K, L228R, V245EV	Virco	NVP	>51.5
	2232- 030715		M41L, D67N, L74V, L210W, T215Y		K101E, Y181C, G190SA		K122E, T165I, E169D, G196E, I202VI, V245Q	Virco	DLV	7.8
			M41L, D67N, L74V, L210W, T215Y		K101E, Y181C, G190SA		K122E, T165I, E169D, G196E, I202VI, V245Q	Virco	EFV	319.0
			M41L, D67N, L74V, L210W, T215Y		K101E, Y181C, G190SA		K122E, T165I, E169D, G196E, I202VI, V245Q	Virco	NVP	>132.6
	3236- 030521		M41L, D67N, V75M, L210W, T215YF	V118I, N348I	K101E, Y181C, G190SA	E138K	V35I, T39D, E40F, K43E, W88C, K122E, I135T, I142V, T200A, H208Y, R211N, H221Y, E224DE, L228H, I244VI, T286A, I293V, I329V, G335SG, R356K, E370A, T377Q, V381IV, T38CI, K390RK	Virco	DLV	9.5
			M41L, D67N, V75M, L210W,	V118I, N348I	K101E, Y181C, G190SA	E138K	V35I, T39D, E40F, K43E, W88C, K122E, I135T, I142V,	Virco	EFV	32.7

			M41L, D67N, K70R, V75M, L210W, T215Y	E44D, V118I	K101E, Y181C, G190S	L283IL, I293V, E297A, I326V, R356K, G359S, T386I, K390R V35T, T39VALS, V60I, K82RK, K122E, I135M, S182NS, H208YH, D218E, K219D, L228H, A272P, K277R, L283IL, I293V, E297A, I326V, R356K, G359S, T386I, K390R	Virco	NVP	>98.9
Ritec (2006)	Clinical	NY0528	M41L, D67N, M184V, T215F		K101E, G190S, M230L	V179I K43Q, K49R, V60I, R83K, D123E, R211K, D237E, A272P, T286A, E297K	Virologic	DLV	5.7
			M41L, D67N, M184V, T215F		K101E, G190S, M230L	V179I K43Q, K49R, V60I, R83K, D123E, R211K, D237E, A272P, T286A, E297K	Virologic	EFV	500.0
			M41L, D67N, M184V, T215F		K101E, G190S, M230L	V179I K43Q, K49R, V60I, R83K, D123E, R211K, D237E, A272P, T286A, E297K	Virologic	NVP	300.0
		NY053	K70R	E44D, T69G, T215I, K219Q	K101E, G190S	K103R K20R, D67d, S68G, R83K, K166R, V245K, A272P	Virologic	DLV	2.2
			K70R	E44D, T69G, T215I, K219Q	K101E, G190S	K103R K20R, D67d, S68G, R83K, K166R, V245K, A272P	Virologic	EFV	500.0
			K70R	E44D, T69G, T215I, K219Q	K101E, G190S	K103R K20R, D67d, S68G, R83K, K166R, V245K, A272P	Virologic	NVP	500.0



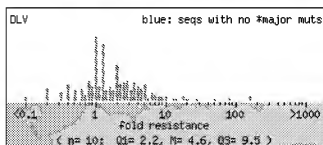
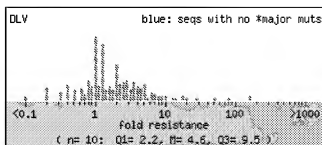
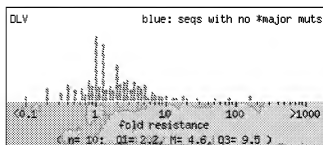
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Assay	ANY	Results	70
WithNoOtherMajorMuts No			



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Page 1 from Results 1 to Result 70 from Total 70 Phenotype results

Author (yr)	Type	Isolates	NRTIMajor	NRTIMinor	NNRTIMajor	NNRTIMinor	Other	Method	Drug	Fold
Margol (2002)	Clinical	MM-4346366641	M41L, M184V, T215Y	E44D	G190A	A98G, V179I	K20R, K102Q, D123E,	Virco	DLV	0.3

			M41L, M184V, T215Y	E44D	G190A	A98G, V179I	I135M, Q207E, T286A, E297K, I329LI, A360T, V365IV K20R, K102Q, D123E, I135M, Q207E, T286A, E297K, I329LI, A360T, V365IV	Virco	EFV	18.0
			M41L, M184V, T215Y	E44D	G190A	A98G, V179I	K20R, K102Q, D123E, I135M, Q207E, T286A, E297K, I329LI, A360T, V365IV	Virco	NVP	121.9
Johnston Clinical (2005)	71361-1		K65R		K101E, G190A	A98G	V35T, K49R, K122E, A158S, E169D, V179D, R211A, V245M	Virologic	DLV	5.9
			K65R		K101E, G190A	A98G	V35T, K49R, K122E, A158S, E169D, V179D, R211A, V245M	Virologic	EFV	>1500.0
			K65R		K101E, G190A	A98G	V35T, K49R, K122E, A158S, E169D, V179D, R211A, V245M	Virologic	NVP	>893.0
Mo (2005)	Clinical	6242_g660_Virco	D67N, K70R, T215F	K219Q	K101E, G190A	A98G	V35M, I135K, E169D,	Virco	DLV	132.3

						I178F, G196E, H208Y, D237DN, V276T, K281R, T286P, V292I, E297K, A304E, M357T, K366R, A400S			
		D67N, K70R, T215F	K219Q	K101E, G190A	A93G	V35M, I135K, E169D, I178F, G196E, H208Y, D237DN, V276T, K281R, T286P, V292I, E297K, A304E, M357T, K366R, A400S	Virco	EFV	17.0
		D67N, K70R, T215F	K219Q	K101E, G190A	A98G	V35M, I135K, E169D, I178F, G196E, H208Y, D237DN, V276T, K281R, T286P, V292I, E297K, A304E, M357T, K366R, A400S	Virco	NVP	84.5
<u>Baxter</u> <u>(2006)</u>	Clinical	1013-030228	M41L, T69D, L74IL, M184V, L210W	Y181C, G190AG	A98G, K103R, V106IV, V179YD	E40F, K43Q, R83K, L109MIL, I135L, S163CS, I167V, T200A, Q207E, R211K,	Virco	DLV	>207.9

	M41L, T69D, L74IL, M184V, L210W		Y181C, G190AG	A98G, K103R, V106IV, V179YD	L226R, D237E, V245E E40F, K43Q, R83K, L109MIL, I135L, S163CS, I167V, T200A, Q207E, R211K, L228R, D237E, V245E	Virco	EFV	>99.2
	M41L, T69D, L74IL, M184V, L210W		Y181C, G190AG	A98G, K103R, V106IV, V179YD	E40F, K43Q, R83K, L109MIL, I135L, S163CS, I167V, T200A, Q207E, R211K, L228R, D237E, V245E	Virco	NVP	>99.1
1050-030305	M41L, D67N, V75M, M184V, L210W, T215Y	E44A	K101E, Y181C, G190A	A98G, F227LF	T39AT, K43E, V60I, T107S, L109I, K122E, I135T, I167V, D177E, G196E, E203K, H208Y, R211K, K223E, V245E	Virco	DLV	3.1
	M41L, D67N, V75M, M184V, L210W, T215Y	E44A	K101E, Y181C, G190A	A98G, F227LF	T39AT, K43E, V60I, T107S, L109I, K122E, I135T, I167V, D177E, G196E, E203K,	Virco	NVP	>99.1

					H208Y, R211K, K223E, V245E			
1080-030414	M41L, D67N, L74V, L210W, T215Y	E44D, V118I, K219R	K103N, Y181C, G190A	A98G	K122E, D123E, K173R, Q174E, G196EG, I202V, E203K, H208Y, R211K, H221Y, V245E	Virco	DLV	>207.9
	M41L, D67N, L74V, L210W, T215Y	E44D, V118I, K219R	K103N, Y181C, G190A	A98G	K122E, D123E, K173R, Q174E, G196EG, I202V, E203K, H208Y, R211K, H221Y, V245E	Virco	EFV	>489.2
	M41L, D67N, L74V, L210W, T215Y	E44D, V118I, K219R	K103N, Y181C, G190A	A98G	K122E, D123E, K173R, Q174E, G196EG, I202V, E203K, H208Y, R211K, H221Y, V245E	Virco	NVP	>93.1
1137-030729	M41L, L74V, M184VM, L210W, T215Y	E44D	K103N, V179F, Y181C, G190AG	A98G, K101R	D86ND, K122E, I135V, E194QE, G196E, H208YH, D218ED, L228RL	Virco	DLV	>258.1
	M41L, L74V, M184VM, L210W, T215Y	E44D	K103N, V179F, Y181C, G190AG	A98G, K101R	D86ND, K122E, I135V, E194QE, G196E, H208YH, D218ED, L228RL	Virco	EFV	>506.5
	M41L,	E44D	K103N,	A98G,	D86ND,	Virco	NVP	>64.5

	L74V, M184VM, L210W, T215Y		V179F, Y181C, G190AG	K101R	K122E, I125V, E194QE, G196E, H208YH, Q218ED, L228FL			
1418-030820	M41L, T69T_ES, M184V, L210W, T215F	A62V	Y181C, G190A	A98GA, V106IV, V179I	K122P, Q174R, I178L, G196E, Q197K, T200A, E203D, Q207E, R211K, L228H, V245M	Virco	DLV	>161.1
	M41L, T69T_ES, M184V, L210W, T215F	A62V	Y181C, G190A	A98GA, V106IV, V179I	K122P, Q174R, I178L, G196E, Q197K, T200A, E203D, Q207E, R211K, L228H, V245M	Virco	EFV	94.4
	M41L, T69T_ES, M184V, L210W, T215F	A62V	Y181C, G190A	A98GA, V106IV, V179I	K122P, Q174R, I178L, G196E, Q197K, T200A, E203D, Q207E, R211K, L228H, V245M	Virco	NVP	>93.1
2063-030625	M41L, D67N, T69D, M184V, T215Y	E44D, V118I, L210S	G190A	A98G, V179I	K43E, D123E, D177E, T200A, E203V, Q207E, R211K, D237E	Virco	DLV	0.4
	M41L, D67N, T69D, M184V, T215Y	E44D, V118I, L210S	G190A	A98G, V179I	K43E, D123E, D177E, T200A, E203V, Q207E,	Virco	EFV	15.8

		M41L, D67N, T69D, M184V, T215Y	E44D, V118I, L210S	G190A	A98G, V179I	R211K, D237E, K43E, D123E, D177E, T200A, E203V, Q207E, R211K, D237E	Virco	NVP	>61.0
	2299-030818	M41L, D67N, L74V, L210W, T215Y	V118I, K219N	K103N, Y181C, G190A	A98GA	K43Q, V60I, K122E, T200A, H208Y, R211K	Virco	DLV	>211.4
		M41L, D67N, L74V, L210W, T215Y	V118I, K219N	K103N, Y181C, G190A	A98GA	K43Q, V60I, K122E, T200A, H208Y, R211K	Virco	EFV	>797.2
		M41L, D67N, L74V, L210W, T215Y	V118I, K219N	K103N, Y181C, G190A	A98GA	K43Q, V60I, K122E, T200A, H208Y, R211K	Virco	NVP	>113.6
	3082-030311	M41L, D67N, T69D, V75M, M184V, L210W, T215Y	V118I, N348I	K101QE, Y181C, G190A	A98G, V108I	V35I, T38AT, E40F, K43E, W88C, I94L, K122E, D123ED, Q174R, V189I, T200A, Q207K, H208F, R211D, H221Y, L228NH, A272SP, K275R, K277R, T286AT, A288S, I293V, Q294L, I341F, T386I, K390R	Virco	DLV	44.1

	M41L, D67N, T69D, V75M, M184V, L210W, T215Y	V118I, N348I	K101QE, Y181C, G190A	A98G, V108I	V35I, T39AT, E40F, K43E, W83C, I94L, K122E, D123ED, Q174R, V189I, T200A, Q207K, H208F, R211D, H221Y, L228NH, A272SP, K275R, K277R, T286AT, A288S, I293V, Q334L, I341F, T386I, K390R	Virco	EFV	>603.3
	M41L, D67N, T69D, V75M, M184V, L210W, T215Y	V118I, N348I	K101QE, Y181C, G190A	A98G, V108I	V35I, T39AT, E40F, K43E, W86C, I94L, K122E, D123ED, Q174R, V189I, T200A, Q207K, H208F, R211D, H221Y, L228NH, A272SP, K275R, K277R, T286AT, A288S, I293V, Q334L, I341F, T386I, K390R	Virco	NVP	>122.0
G188-030508	M41L, D67N, L74V,	E44D, V118I, L210S,	K103N, G190A	A98G, V179T	V35T, T39A, V60I,	Virco	DLV	>163.0

	M184V, T215Y	K219N		K122E, D123S, K173R, Q174K, D177E, T200A, R206M, Q207E, R211K, T216M, L228H, Q242H, V245Q, E248D, D250E, A272P, T286A, E291D, V292I, I293V, E297A, L301M, I329V, Q334P, Q335D, F346Y, M357R, R358G, Q359S, A371V, A376S, I382V, Q394K, E399D		
	M41L, D67N, L74V, M184V, T215Y	E44D, V118I, L210S, K219N	K103N, G190A	A98G, V179T	V35T, T39A, V60I, K122E, D123S, K173R, Q174K, D177E, T200A, R206M, Q207E, R211K, T216M, L228H, Q242H, V245Q, E248D, D250E, A272P, T286A, E291D,	Virco EFV >691.4

					V292I, I293V, E297A, L391M, I329V, Q334P, G335D, F346Y, M357R, R358Q, G359S, A371V, A376S, I382V, Q394K, E399D		
	M41L, D67N, L74V, M184V, T215Y	E44D, V118I, L210S, K219N	K103N, G190A	A99G, V179T	V35T, T39A, VCOI, K122E, D123S, K173R, Q174K, D177E, T200A, R206M, Q207E, R211K, T216M, L228H, Q242H, V245Q, E248D, D250E, A272P, T286A, E291D, V292I, I293V, E297A, L391M, I329V, Q334P, G335D, F346Y, M357R, R358Q, G359S, A371V, A376S, I382V, Q394K, E399D	Virco	NVP >98.9
3296-030728	D67N, K70P,	A62V, T69N,	Y181C, G190AG	A99G, V108IV	P4TP, I5VI,	Virco	DLV >161.0

	Q151M	V75I, F77L, F116Y, T215IT, K219Q		V35IV, T39A, K43Q, K101Q, D123E, T139AT, S162YC, R172KR, D177E, V179X, V189IV, T200IT, E203DE, D218E, L228QHL, A272P, K281R, I293V, E297Q, V317AV, G359S, A360T, A371T, T386I				
	D67N, K70R, Q151M	A62V, T69N, V75I, F77L, F116Y, T215IT, K219Q	Y181C, G190AG	A98G, V108IV	P4TP, I5VI, V35IV, T39A, K43Q, K101Q, D123E, T139AT, S162YC, R172KR, D177E, V179X, V189IV, T200IT, E203DE, D218E, L228QHL, A272P, K281R, I293V, E297Q, V317AV, G359S, A360T, A371T, T386I	Virco	EFV	>658.3
	D67N, K70R, Q151M	A62V, T69N, V75I, F77L, F116Y,	Y181C, G190AG	A98G, V108IV	P4TP, I5VI, V35IV, T39A, K43Q,	Virco	NVP	>76.3

			T215IT, K219Q			K101Q, D123E, T139AT, S162YC, R172KR, D177E, V179X, V189IV, T200IT, E203DE, D218E, L228QHL, A272P, K281R, I293V, E297Q, V317AV, G359S, A360T, A371T, T386I		
3296-040226	D67N, K70R, Y115FY, Q151M, M184VM	A62V, T69N, V75I, F77L, F116Y, T215IT, K219Q	Y181C, G190A	A98G, V108IV, V179TILP	V35I, T39A, K43Q, K101Q, D123E, T139AT, S162C, R172KR, D177E, T200VAIT, E203D, D218E, L228RHHQ, A272P, K281R, I293V, E297Q, G359S, A360T, A371T, T386I	Virco	DLV	>132.9
	D67N, K70R, Y115FY, Q151M, M184VM	A62V, T69N, V75I, F77L, F116Y, T215IT, K219Q	Y181C, G190A	A98G, V108IV, V179TILP	V35I, T39A, K43Q, K101Q, D123E, T139AT, S162C, R172KR, D177E, T200VAIT, E203D, D218E, L228RHHQ,	Virco	EFV	>572.3

						A272P, K281R, I293V, E297Q, G359S, A360T, A371T, T386I			
		D67N, K70R, Y115FY, Q151M, M184VM	A62V, T69N, V75I, F77L, F116Y, T215IT, K219Q	Y181C, G190A	A98G, V108IV, V179TILP	V35I, T39A, K43Q, K101Q, D123E, T139AT, S162C, R172KR, D177E, T200VAIT, E203D, D218E, L228RHQ, A272P, K281R, I293V, E297Q, G359S, A360T, A371T, T386I	Virco	NVP	>75.4
4013-030203	M41L, D67N, L74I, M184V, L210W, T215Y	E44D, V75S, V118I, K219N	K101E, Y181C, G190A	A98G, V108I	K49R, K64R, R83K, I94L, D123E, N137IN, D177ED, I178F, G196E, T200A, E203D, R211K, H221Y, V245K		Virco	DLV	>186.3
	M41L, D67N, L74I, M184V, L210W, T215Y	E44D, V75S, V118I, K219N	K101E, Y181C, G190A	A98G, V108I	K49R, K64R, R83K, I94L, D123E, N137IN, D177ED, I178F, G196E, T200A, E203D, R211K,		Virco	EFV	>707.0

		M41L, D67N, L74I, M184V, L210W, T215Y	E44D, V75S, V118I, K219N	K101E, Y181C, G190A	A99G, V108I	H221Y, V245K, K49R, K64R, R83K, I94L, D123E, N137IN, D177ED, I173F, G196E, T200A, E203D, R211K, H221Y, V245K	Virco	NVP	>53.2
4022-030527		M41L, D67N, T69DA, V75M, L210W, T215Y	E44DE, V118I, K219R	K101E, K103TK, G190A	A98G, V108IV	T39KT, K43E, E53AE, N57HN, V60I, K65EK, K122E, I135L, G196E, T200AT, H208YH, R211K, K223QK, L228HL, V245I	Virco	DLV	1 2
		M41L, D67N, T69DA, V75M, L210W, T215Y	E44DE, V118I, K219R	K101E, K103TK, G190A	A98G, V108IV	T39KT, K43E, E53AE, N57HN, V60I, K65EK, K122E, I135L, G196E, T200AT, H208YH, R211K, K223QK, L228HL, V245I	Virco	EFV	16.3
		M41L, D67N, T69DA, V75M, L210W, T215Y	E44DE, V118I, K219R	K101E, K103TK, G190A	A98G, V108IV	T39KT, K43E, E53AE, N57HN, V60I, K65EK, K122E, I135L, G196E,	Virco	NVP	>69.3

4205-030414	M41L, D67N, T69D, K70R, L74VL, M184V, L210W, T215Y	E44D, K101E, V118I, Y181C, K219Q G190A	A98G	T200AT, H208YH, R211K, K223QK, L228HL, V245I K20R, V35M, V60I, K122E, D123N, E169D, E203K, H208Y, R211D, L228H, A272P, K277R, I293V, E312KE, T369AT, K399R	Virco	DLV	20.1
	M41L, D67N, T69D, K70R, L74VL, M184V, L210W, T215Y	E44D, K101E, V118I, Y181C, K219Q G190A	A98G	K20R, V35M, V60I, K122E, D123N, E169D, E203K, H208Y, R211D, L228H, A272P, K277R, I293V, E312KE, T369AT, K399R	Virco	EFV	103.4
	M41L, D67N, T69D, K70R, L74VL, M184V, L210W, T215Y	E44D, K101E, V118I, Y181C, K219Q G190A	A98G	K20R, V35M, V60I, K122E, D123N, E169D, E203K, H208Y, R211D, L228H, A272P, K277R, I293V, E312KE, T369AT, K399R	Virco	NVP	>122.0
4205-040304	M41L,	E44D, K101E,	A98G	E8KE,	Virco	DLV	13.5

		D67N, T69D, K70RK, L74VL, L210W, T215Y	V118I, Y181C, K219Q G190A		K20R, V35M, V60I, K122E, D123N, S163CS, E169D, E203K, H208Y, R211D, L228H, A272P, K277R, I293V, E312KE, K366RK, T369AT, K390R		
		M41L, D67N, T69D, K70RK, L74VL, L210W, T215Y	E44D, K101E, V118I, Y181C, K219Q G190A	A98G	E6KE, K20R, V35M, V60I, K122E, D123N, S163CS, E169D, E203K, H208Y, R211D, L228H, A272P, K277R, I293V, E312KE, K366RK, T369AT, K390R	Virco	NVP >169.6
4241-030523		D67N, T69D, K70R, Q151M, M184V	A62VA, Y181C, V75IV, G190A F77L, F116Y, V118IV, K219Q	A98G, K101A	E28RK, V35M, I50V, K122E, D177E, E203K, Q207E, F214L, K277R, E291DE, I293V, M357VM, T369VA, A376T, V381I, T396A, K390R	Virco	DLV >97.3
		D67N,	A62VA, Y181C,	A98G,	E28RK,	Virco	EFV >391.6

		T69D, K70R, Q151M, M184V	V75IV, G190A F77L, F116Y, V118IV, K219Q	K101A	V35M, I50V, K122E, D177E, E203K, Q207E, F214L, K277R, E291DE, I293V, M357VM, T369VA, A376T, V381I, T386A, K390R			
		D67N, T69D, K70R, Q151M, M184V	A62VA, Y181C, V75IV, G190A F77L, F116Y, V118IV, K219Q	A98G, K101A	E28RK, V35M, I50V, K122E, D177E, E203K, Q207E, F214L, K277R, E291DE, I293V, M357VM, T369VA, A376T, V381I, T386A, K390R	Virco	NVP	>88.4
	4241-040707	D67N, T69D, K70RK, Q151M, M184V	A62V, Y181C, V75I, G190AG F77L, F116Y, V118I, K219Q	A98G, K101A	E26R, V35M, I50VI, K122EK, T165IT, D177ED, E203K, Q207E, F214L, K277R, E291D, I293V, M357V, T369V, A376T, V381I, T386A, K390R	Virco	DLV	>156.5
		D67N, T69D, K70RK, Q151M,	A62V, Y181C, V75I, G190AG F77L, F116Y,	A98G, K101A	E28R, V35M, I50VI, K122EK,	Virco	EFV	>412.3

	M184V	V118I, K219Q			T165IT, D177ED, E203K, Q207E, F214L, K277R, E291D, I293V, M357V, T369V, A376T, V381I, T386A, K390R			
	D67N, T69D, K70RK, Q151M, M184V	A62V, V75I, F77L, F116Y, V118I, K219Q	Y181C, G190AG	A98G, K101A	E28R, V35M, I50VI, K122EK, T165IT, D177ED, E203K, Q207E, F214L, K277R, E291D, I293V, M357V, T369V, A376T, V381I, T386A, K390R	Virco	NVP	>169.6
4256-030715	M41L, D67N, K70R, V75M, T215F	T69N, K219Q	K103H, Y181C, G190A	A98G, V108I	S3CS, T7P, E25K, K32E, V60I, K82R, D121H, K122E, I135T, I142V, Q174R, D177E, V169IV, G196E, T200A, E203D, Q207E, H221Y, L228H, A272P, K277R, I293VI, V317A,	Virco	DLV	>161.0

M41L,
D67N,
K70R,
V75M,
T215F

T69N, K103H,
K219Q Y181C,
G190A

A99G,
V108I

S322T,
Q334D,
K350R,
T369A,
A376S,
K390R

Virco

EFV

>888.3

M41L,
D67N,
K70R,
V75M,
T215F

T69N, K103H,
K219Q Y181C,
G190A

A99G,
V108I

S3CS,
T7P,
E28K,
K32E,
V60I,
K82R,
D121H,
K122E,
I135T,
I142V,
Q174R,
D177E,
V189IV,
G196E,
T200A,
E203D,
Q207E,
H221Y,
L228H,
A272P,
K277R,
I293VI,
V317A,
S322T,
Q334D,
K350R,
T369A,
A376S,
K390R

Virco

NVP

>76.3

						K277R, I203V, V317A, S322T, Q334D, K350R, T369A, A376S, K390R		
Rhes (2005)	Clinical	71301-2	K65R	K101E, Y181C, G190A	A98G	V35T, K49R, K122E, A158S, E169D, R211A, V245M, K277R, T286A, A288S, E297A	Virologic DLV	>800.0
			K65R	K101E, Y181C, G190A	A98G	V35T, K49R, K122E, A158S, E169D, R211A, V245M, K277R, T286A, A288S, E297A	Virologic EFV	>1500.0
			K65R	K101E, Y181C, G190A	A98G	V35T, K49R, K122E, A158S, E169D, R211A, V245M, K277R, T286A, A288S, E297A	Virologic NVP	>893.0
		CA53818	M41L, D67N, T69A/DN, L210W, T215Y	V75L, V116I K101E, Y181C, G190A	A98G	T39K, K43E, V60IV, I135T, E203D, Q207D, H208YH, R211K, H221VH, L228HL, V245EKQ, A288S	Virologic DLV	31.0

	M41L, D67N, T69ATDN, L210W, T215Y	V75L, V118I	K101E, Y181C, G190A	A98G	T39K, K43E, V60IV, I135T, E203D, Q207D, H208YH, R211K, H221YH, L228HL, V245EKQ, A288S	Virologic EFV	400.0
	M41L, D67N, T69ATDN, L210W, T215Y	V75L, V118I	K101E, Y181C, G190A	A98G	T39K, K43E, V60IV, I135T, E203D, Q207D, H208YH, R211K, H221YH, L228HL, V245EKQ, A288S	Virologic NVP	300.0
SP201325	M41L, T69D, V75M, L210W, T215Y	V118I, K219R	K101E, Y181C, G190A	A98G	E6K, V35M, T39A, K43E, K122E, P170LP, E203K, Q207D, H208Y, R211K, L228H, A272P, I293V, I329L	Virologic DLV	74
	M41L, T69D, V75M, L210W, T215Y	V118I, K219R	K101E, Y181C, G190A	A98G	E6K, V35M, T39A, K43E, K122E, P170LP, E203K, Q207D, H208Y, R211K, L228H, A272P, I293V, I329L	Virologic EFV	46.0
	M41L, T69D, V75M	V118I, K219R	K101E, Y181C, G190A	A98G	E6K, V35M, T39A,	Virologic NVP	>400.0

L210W,
T215Y

K43E,
K122E,
P170LP,
E203K,
Q207D,
H208Y,
R211K,
L228H,
A272P,
I293V,
I329L



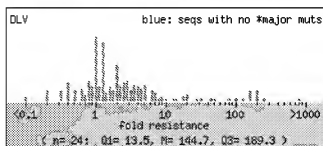
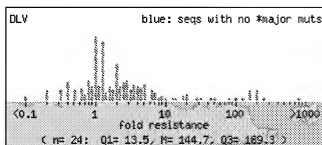
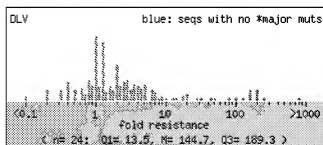
STANFORD UNIVERSITY

HIV DRUG RESISTANCE DATABASE*A curated public database designed to represent, store, and analyze the divergent forms of data underlying HIV drug resistance.*

HOME GENOTYPE-RX GENOTYPE-PHENOTYPE-CLINICAL HIVdb PROGRAM

Detailed RT Phenotype Query

Mutations	G190S, A98G	References	2
Drugs	NVP, DLV, EFV	Isolates	3
Assay	ANY	Results	9
With No Other Major Muts No			



Drug susceptibility results of sequences matching input query are shown in the table below. Literature references are indicated, as well as the isolate name and type and a list of major, minor and other mutations. The fold resistance to the indicated antiretroviral drug is indicated in the last column of the table. Data is also summarized above in graphical format. Blue bars indicate the range of resistance of those sequences with no major NRTI drug resistance mutations or major NNRTI drug resistance mutations, and red bars indicate the fold resistance of sequences matching the input query. The total number of sequences(n), the median fold resistance(m), as well as the first(Q1) and third quartile(Q3) are indicated.

Page 1 from Results 1 to Result 9 from Total 9 Phenotype results

Author (y1)	Type	Isolates	NRTIMajor	NRTIMinor	NRTIMajor	NRTIMinor	Other	Method	Drug	Fold
Huang (1999)	Lab	WH-98G-		G190S	A98G		K102Q, S162C, K277R	Virologic	DLV	1.0

		190S			G190S	A98G	K102C, S162C, K277R	Virologic	EFV	>270.0
					G190S	A98G	K102Q, S162C, K277R	Virologic	NVP	>680.0
<u>Raxib</u> <u>(2006)</u>	Clinical	1479- 030731	M41L, D67E, K101E, L74V, K70A, Y181C, L210W, V118I T215Y		G190S	A98G	T39S, K122E, S162C, Q174N, V189IV, G196E, T200AT, R211K, L228R, V245EV	Virco	DLV	>148.1
			M41L, D67E, K101E, L74V, K70A, Y181C, L210W, V118I T215Y		G190S	A98G	T39S, K122E, S162C, Q174N, V189IV, G196E, T200AT, R211K, L228R, V245EV	Virco	EFV	>374.7
			M41L, D67E, K101E, L74V, K70A, Y181C, L210W, V118I T215Y		G190S	A98G	T39S, K122E, S162C, Q174N, V189IV, G196E, T200AT, R211K, L228R, V245EV	Virco	NVP	>51.5
		6133- 030701	M41L, E44DE, G190SG D67N, V118IV V75M, M184V, L210W, T215Y		G190SG	A98G	P4T, K20R, V35IV, K43E, K101Q, K122E, G196E, H208YH, R211K, V245E, E297K, I329L, R356K, A360VAIT, V365IV, A376SC, T386IT, K390R	Virco	DLV	0.5
			M41L, E44DE, G190SG D67N, V118IV V75M, M184V, L210W, T215Y		G190SG	A98G	P4T, K20R, V35IV, K43E, K101Q, K122E, G196E, H208YH, R211K, V245E, E297K, I329L, R356K, A360VAIT, V365IV, A376SC, T386IT, K390R	Virco	EFV	0.9
			M41L, E44DE, G190SG D67N, V118IV V75M, M184V, L210W, T215Y		G190SG	A98G	P4T, K20R, V35IV, K43E, K101Q, K122E, G196E, H208YH, R211K, V245E, E297K, I329L, R356K, A360VAIT, V365IV, A376SC, T386IT, K390R	Virco	NVP	11.4